



## **Life Cycle Impact**

Disability adjusted life years (DALYs)

## Potential disease burden

**Biofuel** production & location

**Emissions** [kg per joule fuel processed]

Pollutant intake based on release

**DALYs** per joule biofuel processed

**Biodiesel from:** Waste oil Plant oil

Renewable diesel from: Plant oil Other sources 1) Aldeyhdes

2) US EPA Criteria Pollutants (PM2.5, CO, etc.)

- 3) Other Air Toxics (e.g., PAHs)
- 4) Hazardous wastes

Urban scenario/location Rural **Total DALYs Total DALYs** 

**DALYs** per joule conventional diesel processed

## **Conclusions About Key Information Gaps**

- Additives composition, use, and impact
  - How biocides and anti-oxidants impact biodegradation
  - How priority additive impact human and ecosystem health
  - How cold flow property controllers impact multiphase transport
  - toxicity
- Subsurface fate and transport properties
- Releases Material Compatibility
- Biodegradation of all biodiesel components in soils and aquifers
- More information on air emissions
- Missing toxicological data



